

We claim:

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1. A process for removing high boilers from crude caprolactam which comprises high
boilers, caprolactam and in some cases low boilers, and which has been obtained by
 - a) reacting 6-aminocapronitrile with water to give a reaction mixture
 - b) removing ammonia and unconverted water from the reaction mixture to obtain
crude caprolactam,
which comprises
 - c) feeding the crude caprolactam to a distillation apparatus to obtain
a first substream via the top as a product and
a second substream via the bottom,
by setting the pressure in the distillation in such a way that the bottom temperature
does not go below 170°C, and
adjusting the second substream in such a way that the caprolactam content of the
second substream is not less than 10% by weight, based on the entire second
substream.
2. A process as claimed in claim 1, wherein step a) is carried out in the presence of a liquid
diluent.
3. A process as claimed in claim 2, wherein the liquid diluent in step b) [lacuna]
4. A process as claimed in any of claims 1 to 3, wherein the removal of water is carried out
in step b) by transferring the reaction mixture into conditions such that the reaction
mixture forms a high-water and a low-water liquid phase, of which the high-water phase is
removed.
5. A process as claimed in any of claims 1 to 4, wherein the low boilers are removed
between steps b) and c).
6. A process as claimed in any of claims 1 to 4, wherein low boilers are removed after step
c).

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7. A process as claimed in claim 5 or 6, wherein the low boiler removed is 6-amino-capronitrile.
 8. A process as claimed in any of claims 1 to 7, wherein the second substream from step c) is partly or fully recycled to step a).
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